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Beyond business as usual: Aid and financing education in Sub Saharan Africa

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ABSTRACT

Since 1990 and the World Conference on Education for All well over half a trillion dollars has been disbursed as aid to education with much of it targeted on low income countries especially those in Sub-Saharan Africa. Some of the beneficiaries of this aid have transformed their economies and their education systems to the point where they can act as fiscal states and finance their recurrent and capital spending on education from domestic revenue. But too many states have failed to make this transition and remain overly dependent on sequential waves of external assistance to reduce gaps between the finance available and what is needed. Grant aid is now unlikely to grow as COVID-19 related recession suppresses donor spending. Concessional lending to countries with sub-prime credit ratings and high debt service ratios looks imprudent. The architecture and goals of external assistance need to change to focus on making better use of the resources that are available though much increased efficiency and effectiveness, and on ensuring domestic revenue is increased since this is the only pathway to sustainable development that avoids the infinite do-loop of using aid to fill gaps rather than to address their causes.

1. Introduction

Over the last three decades well over half a trillion dollars has been disbursed as aid to education through bilateral and multilateral agencies with much of the disbursement to Sub-Saharan Africa (SSA). Despite this, the numbers of children failing to complete school successfully remain stubbornly high at around 260 million globally. Marginal groups – e.g. the poorest boys and girls, those with disability, some ethnic minorities, displaced children – remain excluded and often benefit less from increases in access and progression than those enrolled in the core of national education systems. The World Bank recently declared a “learning crisis” based on data that shows very large numbers of young people failing to achieve minimum learning standards. This is despite the promises made thirty years ago at the World Declaration on Education for all to endorse the global Framework for Action: Meeting Basic Learning Needs (UNESCO, 1990). The commitment to universal access and effective learning was subsequently reaffirmed at the World Education Forum in 2000 (UNESCO, 2000). Since then progress in closing the educational gaps between Sub-Saharan Africa (SSA) and the rest of the world, and between countries in SSA, has been disappointingly slow¹.

This paper is in several parts. After this introduction the recent evolution of aid to education is described. Next a status report paints a picture of key aspects of the challenge of financing in SSA. The fourth

section illuminates the basic arithmetic of educational financing in low and low middle income countries and includes estimates of shortfalls between current spending and what would be needed to meet targets set by the Sustainable Development Goals. The dilemmas this creates are the subject of section five. The rest of the paper looks forward with a special focus on needs for enhanced efficiency and effectiveness, and for fiscal reform to generate sustainable financing. The conclusions highlight how after five decades of development new approaches are needed which are designed to end dependence on aid and generate a political economy of education that depends on the development of fiscal states able to finance their own public goods. This is long overdue.

The third decade of the 21st century has opened. Long standing beliefs about the role of aid in accelerating educational development are under close scrutiny (Lewin and Sabates, 2012; Mundy and Verger, 2015; Heyneman and Lee, 2016; Samoff et al., 2016; Klees, 2018; Burnett, 2019). It is 30 years since the Jomtien World Conference on Education for All (WCEFA) and doubts about the efficacy of aid to education have led to a stagnation in disbursements. Some declines in commitments by DAC countries have been partially offset by increases in multi-lateral funding and aid from non-DAC sources e.g. sovereign wealth funds. These commitments fall outside global architectures for aid, often have bespoke priorities, and may or may not continue.

Stagnation in aid in the second decade of the 21st century was despite much advocacy of the need to commit more resources to

¹ This paper was written before the scale and consequences of the Coronavirus pandemic became clear. Some of the implications of COVID-19 are discussed in Lewin, 2020.

education to achieve goals of Education for All originally set in 1990 (GEMR, 2017a). Recently the new architecture of UN Sustainable Development Goals for education extends pledges to universalise access to education from preschool up to the end of a full cycle of secondary schooling, much broader access to technical and vocational education (TVET) and higher education, and universal literacy and numeracy. This anticipates much greater financing of education in low income countries (LICs) and low middle income countries (LMICs), and a considerable increase in external support (IFFEd, 2016; Lewin, 2017).

There are clear limits to growth for external assistance to education if its purpose is to lead to sustainable development funded from domestic revenues. The global system for external assistance to education is likely to reach “Peak Aid” at some point in the near future and the volume of aid may start to decline (Lewin, 2019). If the peak is a result of the impact of past aid making more aid unnecessary it should be celebrated. But if it reflects disillusionment with the impact of previous aid to achieve sustainable educational development, it suggests something different to conventional aid to education is needed to finish the job and avoid the trap of an “infinite do loop²” whereby ineffective aid creates the need for more aid.

If “Peak Aid” becomes a reality this will be an opportunity for a new focus on the kind of aid that promotes efficiency and effectiveness with lasting benefits at system level, and on fiscal reforms that make it possible to finance mass education systems from domestic revenue on a recurrent basis. The recently publicised “learning crisis” is partly a result of problems with aid effectiveness (World Bank, 2018). Aid to education has not transformed efficiency and effectiveness over the last three decades in much of SSA. The World Bank itself noted that curriculum development to improve learning was central to strategies for development forty years ago (World Bank, 1980:35). The newly defined learning crisis is unlikely to be resolved by more aid of the same kind as in the past. If the learning crisis is a result of chronic underfunding and inability to disseminate and diffuse the good practices that exist in all education systems to all schools and students then the resolution of the crisis lies inside education systems in LICs and LMICs and depends on endogenously addressing problems with efficiency and effectiveness. Development requires interventions that mobilise enhanced domestic financing. Aid that catalyses durable increases in efficiency and effectiveness has considerable utility. So does aid that nurtures fiscal reforms that are the only pathway to sustainable educational financing from domestic revenue. Filling financing gaps with aid and concessional loans in the short term is much less attractive than promoting system level transitions and fiscal reforms that make education affordable and subject to the normal political economy of national development investment decisions. Current theories of change used by development agencies are largely silent on how this may come to be a reality.

2. Context

The long term average of DAC aid to education since 1985 has been about 10 % of all aid. It was only in the 1960s and 1970s, in the wake of political independence from colonialism, that it reached higher levels (Coombs, 1968, 1985). By 1989 aid to education was converging on about 10 % of the total (Coombs, 1985:295, World Bank, 1991). This translated into a value of about \$5 billion, equivalent to about \$15 billion today. The long history suggests that the global allocation to education has now fallen below the trend line. Advocacy for very large

increases in aid by the International Finance Facility for Education (IFFEd, 2016) seems optimistic and would come at the expense of other sub-sectoral allocations. Any forward planning for achieving the SDGs related to education based on doubling or tripling the international resources available with new money, whether grant or concessional loans, has to explain where the financing would come from, how much it would cost, and how it would resolve problems of sustainable educational financing at levels sufficient to achieve the SDGs. Not at one point in time, but indefinitely. It also has to be open about the fact that loans do not represent new money but are best understood as borrowing from future national income that has to be used to service debt.

The total volume of aid to education from DAC countries grew after the millennium but has stagnated since 2010 with much slower growth recently (Fig. 1). The probability is that the volume of disbursement for 2020 and beyond will be compromised by the impact of COVID-19 on economic growth. If GDP falls by 15 % or more as is predicted by the OECD then aid will contract even if it remains the same proportion of GDP. Recent estimates indicate it may take six years or more to recover from the anticipated decline in levels of aid to education and this depends on whether the appetite for aid remains favourably disposed to educational investment (UNESCO, 2020a).

The share of education in allocatable aid has been falling and is now not much more than 10 % of the total (Fig. 2). This seems to signal a preference for increased commitments to other sectors and in particular health and infrastructure. Within this total aid to basic education has also been falling and now accounts for about 6% of the aid that can be attributed. More aid for education goes to LMICs than to LICs not least because the costs of intervention are much higher in LMICs. Demand for new finance to achieve the SDGs is greatest in low-middle income countries in SSA that do not qualify for traditional grants and concessional lending and this is where financial gaps are largest. In contrast needs for concessionary finance are greatest in the poorest LICs which have the least capacity to raise revenue.

Aid to basic education is spread across more than a hundred LICs and LMICs but is concentrated in a relatively small number of countries. The planned disbursement pattern of the Global Partnership for Education (GPE, 2018a) is illustrative (Fig. 3). The GPE is the largest source of grant aid for education in LICs and it disburses over \$700 million year to nearly seventy countries. About 25 % of the 65+ member countries receiving this aid account for nearly 70 % of all its grants by value. Some large countries like Ethiopia and the DRC are amongst the biggest beneficiaries. On the other hand, 42 % of GPE recipients receive less than 5% of all the grant aid so there is a long tail of commitments (Lewin, 2017:45). Most of these countries are either smaller or richer (or both) than the average LIC, and they include many small island states. Maintaining a long tail of small grants has high transaction costs. Conversely a focus on need determined by the population of excluded children would result in even greater concentration of grants to the largest countries which are not necessarily the poorest.

Aid is becoming less important in total public education spending in many LICs and LMICs in SSA. This is largely because many SSA economies have been growing faster than aid budgets, and because revenue collection is improving. Perspective is important. The 2018 Replenishment Conference of the GPE (GPE, 2018b) generated pledges of about US\$2.3 billion in grant aid for disbursement over three years which was 25 % less than the \$3 billion targeted (GEMR, 2018). This amount can be compared to the additional amounts needed for recurrent financing for Education 2030 in SSA estimated later in this paper as being at least \$40 billion per year. The GPE resource is equivalent to about \$700 million a year, or on average about \$10 million for each of its nearly 70 developing member countries. This is less than 2% of the additional recurrent cost of achieving SDG4 and represents less than 0.1 % of the GDP of SSA. This can be catalytic if it is strongly targeted but not if it is used to fill gaps without clear exit routes.

The GPE Replenishment conference made good use of a pledging

² An infinite do loop is a computer programming term. It occurs when the execution of a series of instructions has no exit route and the processes continue resulting in the initiation and execution of similar instruction sets ad infinitum. This core concept for programming is variously attributed to Charles Babbage (1838), Luigi Manbrea 1842 or Ada Lovelace 1843. Apple Corp's postal address was named Infinite Loop Street, possibly as a reminder of the risks to the unwary project manager.

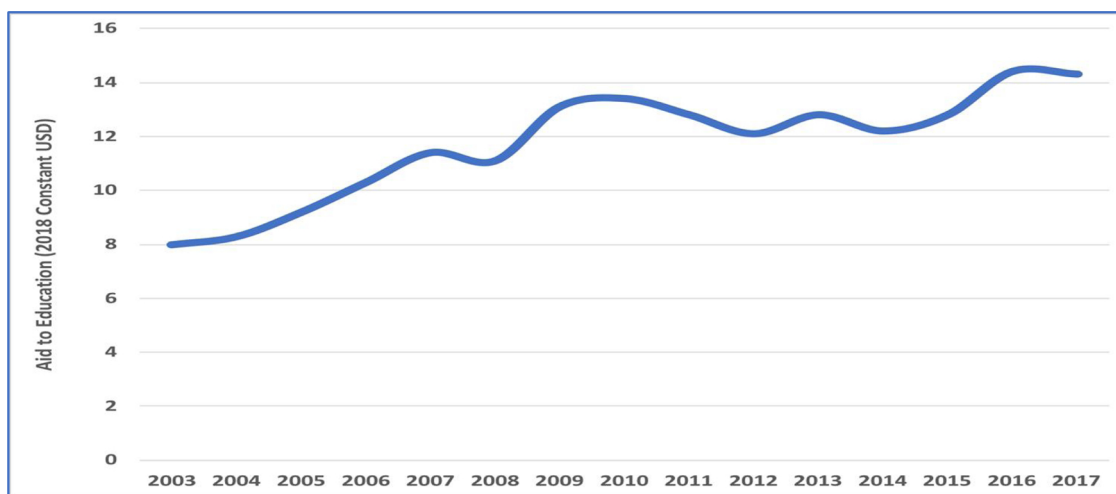


Fig. 1. Aid to Education – DAC -2002-2017.

Source: UNESCO, 2020a GEMR Policy Brief 41§

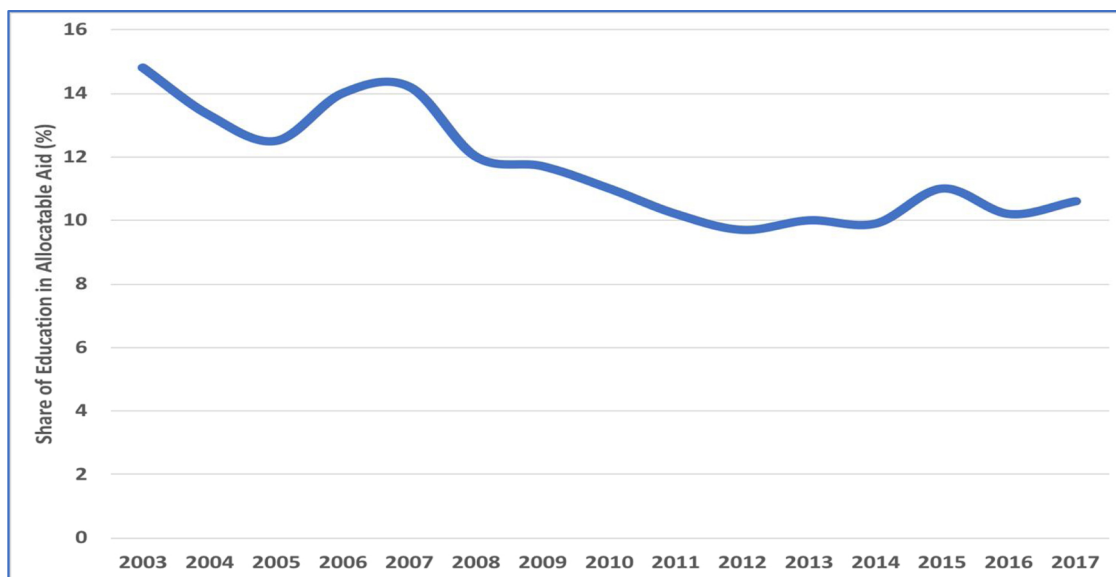


Fig. 2. Aid to Education as a Percentage of Allocatable Aid – 2002-2017.

Source: UNESCO, 2020a GEMR Policy Brief 41

format where countries likely to be in receipt of GPE grants pledged to increase their own spending on education to at least 20 % of their public budget and 4 %–6 % of GDP. These pledges amounted to USD110 Billion dwarfing the USD 2.3 Billion pledged by Donors. These national pledges were much more than in previous years. In 2014 the GPE Replenishment realised pledges of US\$ 26 Billion from countries and US\$ 2.1 Billion from Donors. Taken at face value the relative contribution by countries to the Education 2030 enterprise has increased by a massive four-fold dramatically reducing the significance of aid. This evolution is a signal that most of the financial challenge for education is now for domestic financing and is not likely to be resolved by flows of aid.

External assistance has helped some countries in SSA transform their education systems. But in other countries, including many of the poorest, progress has been disappointing. It is generally thought good use was made of aid in Botswana in the 1960s and in Ghana in the late 1980s as both countries reconstructed and developed rapidly (Dollar and Pritchett, 1998:1). Their education systems benefitted accordingly from large inflows of advice and finance. Less lucky was the Democratic Republic of the Congo that became mired internal conflicts and a

disfunctional public administration that misappropriated aid, and Nigeria which failed to make good use of both oil revenues and aid to ensure all children complete school and learn. Both were in the bottom 10 countries in terms of per capita GDP growth rates over the last two decades of the 20th century despite being heavily aided over 40 years (Easterly, 2007:304). Neither has made the transition to well managed fiscal states.

There is a long way still to go to create universal, inclusive and sustainable systems with high levels of learning achievement of the kind envisaged by the series of UN World Conferences at Jomtien (1990), Dakar (2000), and Incheon (2015) and reinforced by the adoption of the Sustainable Development Goals in 2015. Coombs (1968) offered one of the first systems analyses of global crises in learning which anticipates many subsequent attempts to engage with system level reforms. Dialogues of development still seek evidence based policy that is predicated on the need to answer the question “what works” for enhanced educational access and greater learning achievement (World Bank, 2018). The answers remain contested perhaps not least because there is not a single answer at a global level (Samoff et al., 2016) that can satisfy disparate starting conditions,

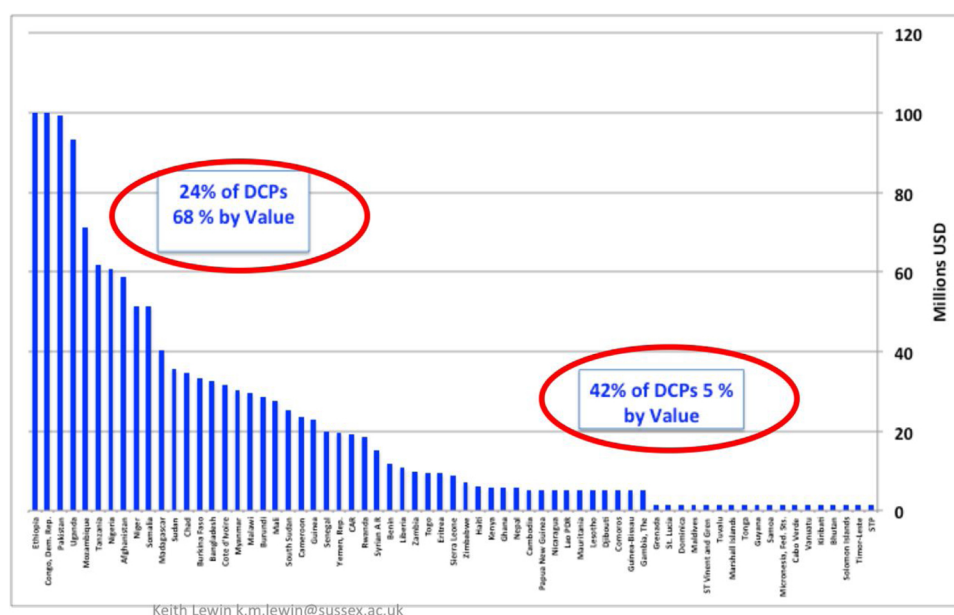


Fig. 3. GPE Projected Support 2017-2020.

radically different resource availability and divergent national aspirations for development. New approaches are needed that go beyond increasing the volume of aid and concessional lending with the same global set of instruments that have failed to resolve the problems in the past. The need is to recognise that failure is always relative to aspirations and that there is an expectation trap if it is necessary to promise much more than can reasonably be achieved to acquire performance related programme funding. Aid related hyperbole should distinguish between what is and what ought to be (Lewin, 1985:121).

There are many views of the purposes of aid to education. An enlightened view is that a core goal is to accelerate development to the point where external assistance is no longer needed. It is also possible that aid can trap countries in a recurrent cycle of external financing (Prebisch, 1950; Singer and Singer, 1950, Easterly, Moyo, 2010; Easterly, 2007:36). A number of LICs that used to receive large amounts of aid have graduated to LMIC or UMIC status and do self-finance most of their education systems. But about 25 countries have received more than 25 % of their national budgets in external assistance for over 25 years. The assertion that aid contributes to economic growth (e.g. Dollar and Burnside, 2000) has proved difficult to evidence, even when the scope of the proposition has been narrowed to include only well governed countries and “short impact” aid that does not include education (Raguram and Subrahmaniam (2005). Mundy and Pritchett are the last in a long list of prominent academics who have asked why after more than 30 years of large scale aid to education both access and learning are still endemic problems in low income countries (Mundy, 2019).

There is a paradox. If educational aid is working and it is effective in catalysing endogenous development then the need for aid should reduce over time. If there are persistent needs for more and more aid this seems to signal the limited impact of previous aid. More insight is needed into why this might be since more of the same kind of aid, *ceteris paribus*, will have the same impact in the future as it did in the past. Seers reminded us in the 1970s that freedom from dependence is part of the definition of development, not just a means to achieve it (Seers, 1977).

Historically, aid led to dependence in those countries in SSA which received large proportions of government budgets through grants and concessional loans. The value of all aid averaged about 12 % of GDP across Africa in 1980 and peaked at around 20 % in the financial austerity of the early 1990s. Since then the total has fallen to around 8%

of GDP as African economies have grown (Moore et al). In contrast tax revenue as a percentage of GDP in SSA has slowly increased from about 14 % to nearly 18 % of GDP in LMICs over the period 1980–2015.

The revenue landscape is changing. SSA received twice as much in aid across all sectors as it raised in taxes in the 1980s. The opposite is now true and since 2015 aid is now less than half the value of tax revenue. The advocacy to double aid to Africa (Commission for Africa, 2005) and to double it again (Sachs, 2006) has yet to gain traction not least because much of SSA has developed rapidly up to 2020. The good news is that more than a dozen countries can now be described as “fiscal States” able to borrow commercially and able to finance their own public services if they do so prudentially. More countries will join this club and assert control over their education and development agenda with domestic accountability to their own taxpayers. As they do the demand for educational aid will diminish. COVID-19 may delay this evolution but it is unlikely to change the direction of travel.

3. Status report on SSA

Six decades after a “wind of change” blew across the African continent and resulted in independence for most countries, SSA has the largest proportion of children who do not attend primary school, the smallest proportion of its population completing secondary schools, and the largest challenges in financing mass post primary and higher education than any region of the world (GMR, 2015). Sustainable educational finance is fundamental to consistent development, balanced investment, and national identity (Lewin, 2015a).

Sub-Saharan Africa is unlike other regions of the developing world. Over 60 % of its countries are Low Income Countries (LICs); 30 % are Low-Middle-Income Countries (LMICs); and 10 % are Upper-Middle-Income Countries (UMICs). More than 65 % of all out of school primary children are in LICs, and over 70 % of the poorest Africans live in LICs. LICs are much poorer than LMICs. LICs have an average GDP per capita of about US\$600 (PPP 1680) and LMICs about US\$ 2775 (PPP 7200). LMICs are on average about four and a half times richer than LICs on a per capita basis. The total GDP of all LMICs in SSA is about US\$1980 billion and the LICs US\$ 340 billion indicating substantial differences in capacity and assets. Seven \$100 billion economies account for over 70 % of the total of Africa’s GDP. About 30 % of this total GDP is located in North Africa. About 40 % of the SSA GDP is located in just three countries in SSA – Nigeria, South Africa and Angola. The next ten

Table 1
Gross Domestic Product/Capita and Allocation to Education.

	GDP Per Capita	Purchasing Power Parity per Capita	Education as % GDP	Education as % Government Budget
	US\$	PPP\$		
LICs	598	1680	4.1	16.6
LMICs	2775	7206	4.8	17.2

economies from GDP \$100 billion to \$20 billion account for about 10 % of Africa's GDP and 37 countries account for the remaining 20 %. Financially, Africa's wealth, and the resources for education, are concentrated in LMICs, and especially in the largest and richest LMICs.

The allocations to education by governments average 4.1 % of GDP in LICs and 4.8 % in LMICs in Africa (Table 1). These amounts include external assistance to education which in some countries may exceed a third of the public budget. Education as a proportion of all government spending is about 16.6 % of total government spending for education in LICs, and 17.2 % for LMICs. Within this, the proportions allocated to primary, secondary and tertiary education in the LICs are 1.8 %, 1.3 % and 1%, and in LMICs are 1.7 %, 1.9 % and 0.9 %. There is therefore a tendency for LMICs to allocate more to secondary and less to tertiary as a percentage of their total commitment, not least because of higher participation rates. This is a different distribution to that of aid to education as reported above.

There is surprisingly little difference between LICs and LMICs in the average proportion of government resources allocated to education and there is thus no obvious sense that richer countries in Africa prioritise education more than poorer ones. However, there are large differences in the proportion allocated between individual countries and this is significant in terms of indicating the level of political will to support educational development and extend its reach to all of the population of children and youth.

The demand for educational financing depends on how many children are enrolled. The population of the African LICs is about 570 million and of the LMICs about 670 million. LICs have a younger population with 15.5 % being of primary school age compared to 13 % in LMICs. These proportions are high and indicate that demographic transition has not occurred in most countries in SSA.

Child population growth rates are lower in the LMICs, especially countries with high GDP per capita where demographic transition may be starting (UN Population, 2015). However, most countries in SSA will not see a decline in the number of children until after 2050 (Canning et al., 2015). The result of continued high child population growth is that demand for school places will continue to grow rapidly. Most of these new places are at secondary level and above where expansion is made up of population growth compounded with increased participation in secondary schools.

Out of school children are concentrated in LICs. The UNESCO Institute for Statistics (UIS) estimates that there are about 13 million primary age children out of school in SSA in LICs with a further 2.3 million in LMICs as shown in Table 2. If projections for missing data are included the estimate rises to as many as 32 million primary age children out of school in SSA. If secondary age children are included the figure is over 90 million (UNESCO 2016).

Table 2
Demographics and Out of School Children.
Source UIS, 2018

	Total Population	Population Growth	Child Population Growth	Primary Age	Out of School Primary ^a
		%	%	%	'000
LICs	573,301	2.7	2.1	15.5	13127
LMICs	671,478	1.8	1.4	13.2	2330

^a Not including missing country data estimates.

The number of children thought to be out of school globally has fallen dramatically. In the late 1980s we estimated that globally about 130 million children of primary school age were not enrolled (Colclough and Lewin, 1990). By the time of WEF 2000 the number had fallen to about 94 million (UNESCO, 2000). When the Incheon World Education Forum convened the number had fallen further to about 60 million (UNESCO 2015). Half of the 60 million out of school primary age children are now in SSA compared to about 40 % in 1990. Over 20 million of these are located in just six countries. Ethiopia, Mali, Niger, Nigeria, South Sudan and Tanzania (UIS UNESCO Institute of Statistics, 2018a, 2018b). In 1990 80 % of children failed to enrol in secondary school in SSA. By 2015 enrolments in secondary had increased fivefold from 11 million to 55 million but still about 60 % remained Out-of-School. Many studies detail the evolution of children out of school (e.g. UNICEF 2014, UNESCO, 2020b). Other parts of the world succeeded in achieving more equitable access to primary and secondary school more rapidly than did SSA.

Strikingly the problem of out-of-school children is no longer mostly about children below the age of 11 years. It is about teenagers. In the last five years the global definition of Out-of-School children has expanded to include children above primary school age. Over 370 million children and young adults were not in school or full time education in 2000. By 2014 this number had fallen to about 263 million according to the GEMR (2019). Over 53 % of the 263 million now thought to be out of school are of upper secondary age (16–18 years) and 23 % are of lower secondary age (13–15 years) (UIS UNESCO Institute of Statistics, 2018b).

This insight rewrites the map of the problem of Out-of-School children and the cost of addressing it. It raises questions about whether the right to education extends to the end of the teenage years and if so how will the delivery of the right be financed? It also places in sharp focus the equity trade off between “investing more in the most marginalised” or investing at the levels where the largest numbers are excluded (UNESCO, 2017; GEMR, 2017a, 2017b). The choice is essentially political.

LICs and LMICs in SSA have similar Gross Enrolment Rates (GERs) at primary level. These now average 102 % and 103 % respectively. Primary completion rates do differ and average 50 % in LICs and 75 % in LMICs indicating that as many as half of all children are not completing primary school on schedule in LICs. At the same time 30 % of students are overage in LICs and 21 % in LMICs. Low completion rates are correlated with over age enrolment and progression. This core problem of over age children is widespread and central to the learning crisis and inflates the costs for each successful school graduate.

GERs for the whole of secondary school average nearly 40 % in LICs and 70 % in LMICs. The NER for Lower Secondary is 60 % in LICs and about 80 % in LMICs. The implication is that less than half of all children in LICs complete lower secondary and fewer do so on schedule with appropriate levels of learning achievement. The largest gaps in school enrolment between rich and poor are in secondary in LICs. These gaps are much larger than those correlated with gender. LICs have far fewer students at tertiary level with only 7% GER in LICs compared to 20 % in LMICs as illustrated in Table 3.

Costs per student are central to financial shortfalls. Costs per student can be varied whereas the number of school age children in the age

Table 3
Enrolment Rates at Different Levels.
Source UIS, 2018

	GER Primary	Primary Completion	GER Secondary	NER Lower Secondary	GER Tertiary
	%	%	%	%	%
LICs	102	49	38	59	7
LMICs	103	74	65	82	20

group is fixed in the short term. Surprisingly, average costs per student as a percentage of GDP per capita at primary are similar in LICs and LMICs and average about 12 % as shown in Table 4. LICs have relatively more expensive secondary school systems than LMICs, and much more expensive tertiary systems. Thus in LICs cost per student at tertiary level stands in a ratio of 12:1 to the cost of a child in primary school. In LMICs the ratio is still high at over 5:1. In OECD countries it is less than 2:1. This means that as higher education expands rapidly in SSA it will take an increasing share of the education budget and be responsible for a growing proportion of financing shortfalls unless public costs per student are reduced.

These differences in cost per student by level are reflected in the US \$ costs which show that though LMICs are more efficient than LICs at secondary and tertiary levels in terms of cost per student as a percentage of GDP, the actual amounts this represents in US\$ are four times greater at primary and secondary levels in LMICs than they are in LICs. Thus gaps in funding arising from per student costs will be at least four times more expensive to fill in LMICs than in LICs. This is a critical observation for aid directed at filling financing gaps. The same amount of money can have far more impact in LICs all things being equal. LICs are more likely to need grants or highly concessional forms of financing than LMICs.

4. Basic arithmetic and financing shortfalls

A simple algorithm provides an indication of the demand for finance for education (Lewin, 2008). It can be used to calculate how much governments spend on their education systems and how much they would need to spend if they were to reach universal enrolment from pre-school through primary to the end of secondary school and achieve much higher rates of participation in tertiary institutions.

The basic arithmetic of educational financing is that resources needed in terms of a percentage of GDP per capita are determined by the desired level of enrolment, the proportion of children of school age, and the costs per student per year (Lewin, 2008). Thus the aggregate recurrent costs of expanding schooling towards target levels of provision (e.g. defined by the Gross Enrolment Rate) can be calculated using the linear equation:

$$X = GER * A * C \text{ where:}$$

$$X = \text{Public expenditure primary/secondary education as a \% of GDP}$$

$$GER = \text{Gross Enrolment Ratio}$$

$$A = \text{The proportion of the population of primary/secondary school age}$$

Table 4
Cost per Student.
Source UIS, 2018

	Primary/Student % GDP/Cap	Secondary/ Student % GDP/Cap	Tertiary/Student %GDP/Cap	Primary/Student US\$	Secondary/ Student US\$	Tertiary/Student US\$
LICs	12	24	171	185	321	2271
LMICs	13	20	68	820	1239	4222

C = Public recurrent expenditure primary/secondary schooling per student as % GDP/Capita

The assumption of the SDGs and many national education policies is that GERs will reach universal levels by 2030 or soon after. This can be modelled by targeting GER 105 % for all levels of education below tertiary to account for modest levels of repetition, and defining an appropriate level for post school enrolments. The first parameter of the algorithm is therefore known.

The second parameter is A which is the proportion of children of primary school age. UN Population estimates indicate that A varies from 14% to 20% in LICs and averages 15.5%. In the LMICs the range is from 7% to 18% and averages 14%. There is a significant trend for richer countries to have lower values. Where A is below 12 % demographic transition to low growth is likely to be taking place. A large value for A makes it difficult to finance universal participation since there are relatively large numbers of children per working adult.

The third component of the estimation of gaps in financing at macro level relates to costs per learner. Data on these costs is uneven and they can vary enormously between countries, educational levels, institutions at the same level, and over time. In Europe and North America, costs per student average 22 %, 23 % and 27 % per student at primary, secondary and tertiary level. In LICs in SSA the averages are 12 %, 24 % and 170 % of GDP per capita. LICs appear to under invest in primary school systems and over invest in higher education relative to high income countries but such conclusions need careful interpretation since several factors interact. Importantly different demographics result in there being as many as three times the number of children per adult in LICs as in high income countries. Most of the resources for expanded access will have to be publicly financed and most educational provision will have to be fee free if the poorest are to participate given that 30 % of more of the population of LICs are near or below national poverty lines.

We have estimated the gaps in funding necessary to achieve the goals set by governments and the Sustainable Development Goals (Lewin et al., 2019). The modelling for the African Development Bank indicates that the amounts allocated to finance education systems in SSA as currently configured are about 3.6 % of GDP in LICs and 4.2 % in LMICs. The results are shown in Table 5: Scenario 1. This computation uses typical values of key parameters averaged across education systems in SSA. This is consistent with the averages of 4.1 % and 4.8 % of GDP reported in aggregate figures by UIS (Table 1) since these higher figures include the contribution of aid and loans.

The model shows what would be necessary to achieve full enrolment, i.e. GER 105 % in primary and secondary in LICs and LMICs, GER 30 % at tertiary in LICs and GER 50 % in LMICs in SSA in Table 5: Scenario 2. This can be achieved with a little over 6.6 % of GDP in LICs and 6.1 % of GDP in LMICs if cost saving reforms reduced costs per student at lower and upper secondary and higher education. In this model, it would also be possible to increase costs per child at primary level from 12 % to 14 % of GDP per capita to improve quality. This scenario does not compute the costs of providing universal access to pre-school that would add about 0.5 % of GDP to the total cost.

Estimates of recurrent costs are determined predominantly by teachers' salaries and these are factored into the cost per student. This does not account for the cost of training teachers. The number of new

Table 5
Projections of Financial Gaps (SSA).
Source UIS, 2018

	SCENARIO 1				SCENARIO 2				
	GER	Cost per Child US\$	% Gross Domestic Product Needed	Total Billion US\$	GER	Cost per Child US\$	% Gross Domestic Product Needed	Total Billion US\$	" Gap " Billion US\$
Primary	102	12	1.9	9.7	105	14	2.2	11.1	1.4
Lower Secondary	60	20	0.8	4.3	105	20	1.4	7.2	2.9
Upper Secondary	20	30	0.4	1.8	105	30	1.8	9.2	7.4
Higher	7	170	0.5	2.4	30	100	1.2	6.2	3.7
Total LMICs			3.6	18.3			6.6	33.7	15.4
Primary	103	13	1.7	24.8	105	14	2.0	27.9	3.1
Lower Secondary	85	20	1.0	14.5	105	20	1.2	17.1	2.6
Upper Secondary	50	25	0.7	9.8	105	30	1.7	23.5	13.7
Higher	20	75	0.8	10.7	50	50	1.3	17.8	7.1
Total			4.2	59.8			6.1	86.4	26.5

teachers needed in SSA is likely to be very large. Assuming growth in enrolment to GER 105 % at all levels except higher education and child population growth of 2% in LICs and 1% in LMICs the number of students will increase from 122 million to 239 million in LICs and 131 million to 221 million in LMICs. In all, at least 15 million new teachers will be needed to meet increasing student numbers and compensate for attrition estimated at 3% per year. Over 60 % of new teachers needed will be at secondary level. In addition, many pre-school teachers will need to be employed. The number is difficult to estimate but could be as many as an additional 2 million. The number of tertiary college lecturers would also have to expand. The issues that surround teacher supply and demand will be prominent in all SSA countries. Teachers' salaries have to be financed from domestic revenues in all but the short term or dependence will be the result.

The capital costs of expansion are additional to these estimates. A total of 9.2 million new classrooms will be needed in LICs in SSA and 8.6 million in LMICs. Most of the new classrooms will be at secondary level. We estimate 65 % in LICs and 55 % in LMICs. If the costs of classrooms are US\$10,000 per classroom at primary and US\$15,000 at secondary then the total cost to meet demand until 2030 is about US\$ 73 billion in LICs and US\$53 billion in LMICs.³ These amounts appear large but are for a long term investment over as much as 50 years. Looked at this way, the annual spending could be managed to be less than US\$ 10 billion a year across Africa initially tapering off to much less as the stock of buildings increases and demographic transition eventually happens.

The modelling shows that to reach or exceed 6% of GDP for education would cost at least another US\$ 15.4 Billion per year for the LICs and US\$ 26.5 Billion for the LMICs. Most of the additional cost would be in expanded participation in lower and upper secondary school, and at tertiary level. The additional cost would be greater for the LMICs than the LICs because their systems are much more expensive. However, the LMICs are more likely to be able to finance the additional costs themselves if the political will exists. Critically the financing gap is recurrent and would have to be supported from domestic revenue sooner or later (Archer, 2016). Grants are risky if used for recurrent financing. Loans are limited by credit worthiness and the level of repayments that can be sustained.

The analysis shows that:

- The distance between what African countries spend on education and what they need to spend is very large. In LICs, an additional US \$15.4 Billion a year would be needed and in LMICs about US\$26.5 Billion. These gaps would require a doubling of current expenditure

in LICs and a 50 % increase in LMICs.

- The most intractable financial gaps are in recurrent expenditure. Full participation needs allocations of more than 6% of GDP to education, alongside more than 20 % of the government budget as well as significant increases in domestic revenue to more than 20 % of GDP (see below).
- At least US\$120 Billion of capital spending over ten years will be needed to provide space for expanded cohorts of learners.
- An additional 15 million teachers will need to be recruited and trained and their salaries financed by 2030.
- Costs per student are uneven between levels. Twice as much is spent on a secondary child as a primary child and up to 15 times as much on a tertiary student.
- On average 52 % of the population live below national poverty lines in LICs and 27 % in LMICs in Africa. Costs in LICs and LMICs make self financed fee paying education above primary level widely unaffordable for most children below the second quintile of household income.
- Structural changes could facilitate greater enrolment and expanded access without diminishing quality, greater productivity could lead to better salaries for teachers, and more equitable methods of cost sharing could be facilitated.
- Large amounts of external finance can begin to create dependence which may undermine domestic politics and discourage tax collection to support public services like schools.

5. The educational financing dilemma

Financial and demographic modelling shows that at least 6% of GDP would need to be allocated to education on a recurrent basis to achieve the goals set by the SDGs for LICs and LMICs (Lewin, 2019). This is more than the 5% of GDP rich countries of the OECD provide. The problem is that tax to GDP ratios are low, and there are far more children per tax paying adult in LICs and LMICs.

The amount of GDP governments spend on education is determined by the amount collected in revenues to finance the public budget⁴ and the proportion of the government budget allocated to education. The equation is:

$G = R \times P$ where:

G = Education spending as a percentage of GDP

R = Revenue as a percentage of national GDP

P = Government expenditure on education as a percentage of total government expenditure

³ Costs of construction in LMICs are likely to be higher than in LICs though these may be offset by greater opportunities to share costs with communities.

⁴ Including borrowing and grant aid

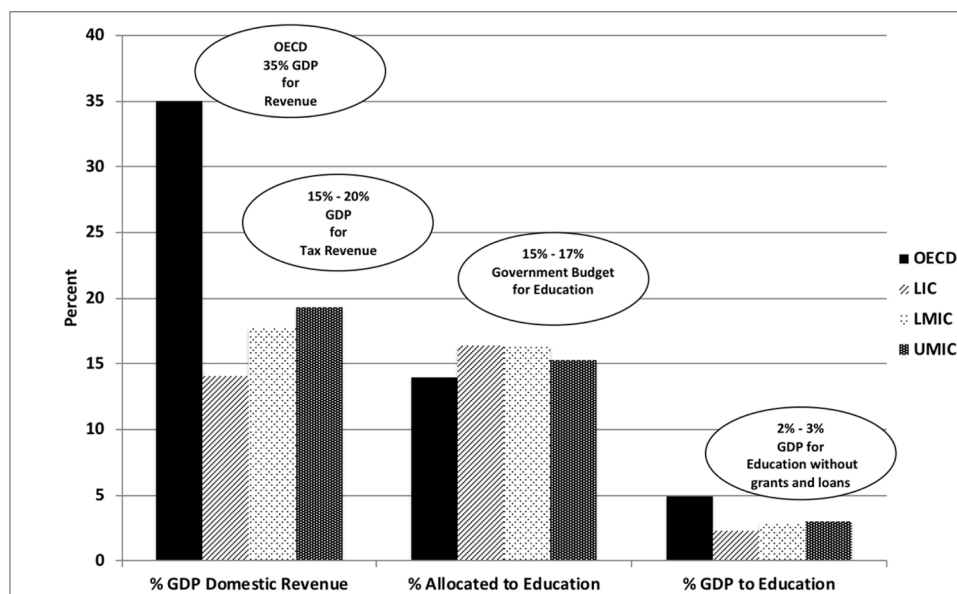


Fig. 4. Revenue, Education Budget and Education as % of GDP - Average Values.
Source: Author's Infographic

If 5% of GDP is allocated to education, as it is in most OECD countries, this can be achieved with revenue collection of about 35% of GDP and an allocation of about 14% of the government budget to education (i.e. $35\% \times 14\% = 4.9\%$). The amounts look very different in different groups of countries and Figure 4 shows typical values. LICs, LMICs, and UMICs⁵ on average collect between 15% and 19% of GDP in revenue and allocate about 15%–17% of government expenditure to education. The result is that they spend about 3% of GDP on education⁶ and this is not enough to enrol all the children (Lewin, 2017).

Increasing expenditure on education to 20% of government spending and continuing to collect 17% of GDP in domestic revenue would only result in 3.4% of GDP being allocated to education (20% of 17%). This is not nearly enough. To achieve spending of 6% of GDP LICs and LMICs will have to increase both their allocation to education to over 25% of the national budget and increase domestic revenue to more than 25% of GDP as shown in Figure 5.

The analysis shows that shortfalls in financing are much larger than current or planned disbursements of aid, especially in SSA. Aid to education is unlikely to amount much more than US\$ 4 billion per annum for Africa, or about 0.3% of the GDP of SSA (Lewin, 2019, Al-Samarrai 2019). Currently 48% of countries in Africa spend less than 4% of GDP on education and only 22% spend more than 6% including contributions from aid. As many as 43% of countries allocate less than 15% of government budgets to education and only 26% allocate more than 20% as suggested by development partners. Fiscal reform is needed to transform the prospects for financing learning for all children.

There may be a learning trap that can lead to a low learning equilibrium (World Bank, 2018; Lewin, 2018a) but this remains to be demonstrated. However, there is evidence of a public expenditure equilibrium for investment in education which appears to have reached a ceiling. The average proportion of GDP allocated to education in LICs and LMICs has proved very resistant to change over time. According to Coombs (Coombs, 1985) developing countries as a group increased

spending from an average of 2.3% of GDP in 1960 to around 4% by 1979. The World Bank estimates are similar with the proportion of GDP peaking at about 5% in Sub Saharan Africa by 1985 (World Bank, 1991). The proportion of public spending allocated to education in developing countries increased from 12% in 1960 to 15% by 1965. It remained between 15% and 16% from then until 1978 (Lewin et al., 1982). By 1990 at the time of the Jomtien Conference on Education for All our analysis for UNICEF (Colclough and Lewin (1990) calculated that on average low income countries were allocating between 4% and 5% of GDP to education and about 15% of public expenditure. Over the next three decades up to the present UNESCO Institute of Statistics data show that the averages for low income countries have hovered around 4% for LICs and LMICs and the average proportion of public expenditure on education has fluctuated around 15% (Lewin, 2008, 2017).

We can conclude that LICs and LMICs have chosen not to move far away from educational spending of 3.5%–4.5% of GDP (including aid), and 14%–16% of their public budget. Whatever their political economy, this is the level at which many systems have equilibrated over the long term. Though some countries have allocated over 20% of the budget to education, none have maintained investment at such high levels over a long period. Setting arbitrary targets for expenditure on education independent of other demands on budgets ignores the obvious. Investment in education arises from a political economy of possibilities and preferences. If the education budget goes up as a percentage of all public spending then something else must come down. Whether there are real changes in spending will also depend on how much tax is collected. If there is a learning crisis resulting from under investment it needs a theory that explains this “resistance to change” to finance learning despite hundreds of billions of dollars of external assistance for development.

It is clear that the bulk of financing for educational development in SSA will need to come from efficiency gains and from domestic resources. Growth in African economies will contribute to expanding the revenue base that finances public expenditure. About half the LICs will become LMICs by 2030 and this should result in real growth in education budgets (Lewin, 2017). Critically the financing shortfalls for education are recurrent (i.e. they replicate every year) and would have to be supported from domestic revenue sooner or later. Grants are not useful for recurrent financing since they do not produce a predictable flow of funds to pay teacher's salaries. Loans create long term debt that

⁵ OECD = Organisation for Economic Cooperation and Development; LICs = Low Income Countries; LMICs = Low Middle Income Countries; UMICs = Upper Middle Income Countries using World Bank definitions

⁶ UNESCO Institute of Statistics yields a higher average of about 4% of GDP for LICs and LMICs but this includes grants and loans.

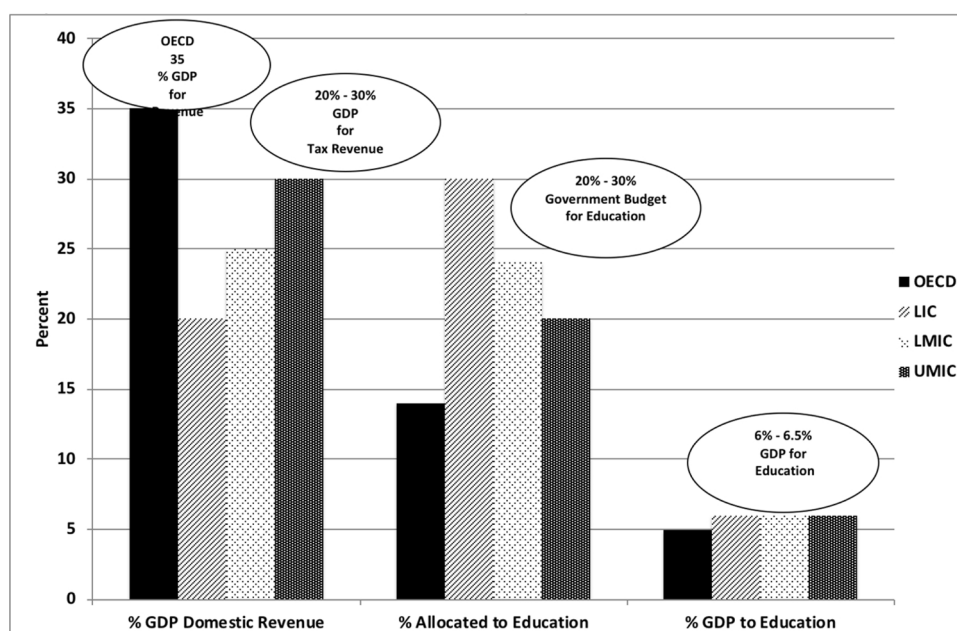


Fig. 5. Revenue, Education Budget and Education as % of GDP to achieve 6%.
Source: Author's Infographic

has to be serviced from domestic revenue and are limited by creditworthiness and ceilings on the level of debt repayments that can be sustained without default.

In sum, demand for aid depends on national goals, starting points, demographic transitions, and political will. At least 6% of GDP is needed to finance universal access to education to grade 12. However, poor countries currently allocate not much more than 3% of GDP excluding aid and loans. About 10% of SSA countries receive more than 20% of GDP from external finance and half receive more than 5%. A recent study suggests 20% of education budgets in LICs are financed from flows of aid (Al Samarrai et al., 2020). Too much aid may increase dependence. Sustainable financing education depends on public funding which may be complemented by aid. However, aid and other alternative sources of finance are insufficient to support recurrent costs. Effective aid is catalytic, time limited, linked to purpose, and adapted to context for countries with different dynamics. The number of countries receiving aid should fall as effective aid reduces the number needing external support.

6. Moving forward

There are two ways of bringing educational aspirations closer to financial realities. The first is to make better use of the resources available through gains in efficiency and effectiveness. The second is to generate more domestic revenue through effective fiscal policy and innovative methods of financing public goods without creating more debt and dependence on external financing. External assistance, most often as grants or as concessional lending, can enhance educational investment and is sometimes presented as a third way to close gaps. But it cannot fill gaps in recurrent financing in a predictable or sustainable way⁷. Nor can the kind of externally driven lending and borrowing characterised as innovative finance.

Thus a two pronged approach is needed. **First**, the need is to catalyse reforms to *improve educational delivery systems so that they are more efficient and effective*. SSA spends relatively more on education

and gets relatively less in terms of access and learning outcomes than most other parts of the world. This despite the finding that access to schools in poor countries is more important to equity than in rich countries (Heyneman and Loxley, 1983). Three generations of aid to education since the 1960s have not succeeded in catalysing a transition to more efficient and effective systems in many of the SSA countries. These need to deliver access to education to all from pre-school through to grade 12, and finance publicly funded mass higher education systems free to those who cannot afford to pay and who are able to participate. This has to be achieved at costs affordable to government and to households. Innovative approaches to managing the cost of delivery of high quality conceptually challenging and skill based education and training are needed. If persistent shortages in critical parts of the labour force are to be overcome. This means investing in finding ways of delivering more efficiently and effectively STEM and TVET to much greater proportions of the age group to higher levels. It means financing research and development related to curricula and pedagogies that increase the value added of various kinds of demand driven education and training linked to employable skills and capabilities. The need is to achieve more efficient translation of revenue into high quality educational services that result in learning.

Second, fiscal reforms are needed *to increase domestic revenue to levels that more nearly approach what is needed* to achieve and sustain the targets set by national governments and by the SDGs. This would have general benefits in helping to create more balanced public budgets. If the political will exists in a country to invest in equitable growth of quality educational provision, and social conflict or economic collapse are not over-riding obstacles to development, then the main constraint to sustainable educational development will be under funding of public education systems delivering education to those who cannot pay for schooling financed by fees to households. Achieving the substantial increases in levels of domestic revenue needed to finance government spending on education requires fiscal reform and much more effective revenue collection.

7. Enhanced efficiency and effectiveness

Enhanced efficiency and effectiveness could greatly reduce the size of financing gaps within the current envelop of resources. If the worst

⁷ There is a fourth way to close gaps. It is to vary the time scale for goal achievement and/or to change the goals. For the purposes of this argument this option has been ignored but is clearly relevant.

systems were as efficient as the best in SSA, more than twice as many children could be educated at the same cost. If the pedagogy and school management of the best schools could be extended to those performing poorly, the gains in learning would act directly to diminish under achievement. There is a compelling opportunity to use new technologies and technical assistance to find ways to finance *sustainable* development through catalytic inputs. These need to generate lasting benefits at system level in enhanced access, quality and diminished environmental impact that do not depend on sporadic external financing.

Existing studies and reports identify many different ways of enhancing efficiency and effectiveness (e.g. Heyneman and Loxley, 1983; Lockheed and Verspoor, 1990; White, 2004; Lewin and Caillods, 2000; Lewin, 2008, GEMR, 2016, World Bank, 2018). A condensed list of selected issues that serves as a starter for consideration includes the following;

- o **Inequalities** related to household income are widespread and persistent. The chances of children from the poorest 20 % of households completing secondary schools can be one fifth or even less of the chances of those from the richest 20 % of households. Expanded access often benefits the not so poor more than the poor in terms of access to secondary school. Drop out is a source of inefficiency and high costs per successful graduate. Inequalities in access and learning lead to poor value for money in many education systems.
- o **Underachievement** leading to silent exclusion of those enrolled but learning little and achieving two or more years below their nominal grade level. Low achievement is a pre-cursor of drop out and failure to manage learning is a major source of internal inefficiency.
- o **Over-age students** are common in schools in SSA though they are often invisible to those who plan systems. More than 20 % of students may be two or more years older than they should be for their grade with a high correlation between being over-age and poor academic performance and subsequent drop out. Over-age progression inflates the number of years of schooling that are needed to produce one graduate and increases costs.
- o **Small schools** are widespread especially in rural areas; they can have high costs per student and difficulty in delivering the national curriculum effectively especially at secondary level. Schools with only 150 students can have costs per student four times those of schools with 750 enrolled. In some districts in some countries half of all schools have less than 150 students.
- o Conversely **mega-schools** with enrolments of several thousand are appearing in high demand locations in major towns and cities. Though these schools may be cost efficient they may have problems with the effective management of learning and with attrition. They may also have high costs to households as a result of large catchment areas.
- o **Student teacher ratios** in many SSA countries at secondary level average less than 20:1 but class sizes are often over 50. The teacher class ratio can be over 2.5:1. This is a large part of the reason why costs per student at secondary in much of SSA are typically three or more times those at primary level. No high enrolment country has such cost ratios. Fixing this could double access for little additional cost.
- o The **costs to households** of school attendance can be as much or more than the public costs. It increases steeply from primary to secondary school. If access is rationed by price it will be inequitable and socially inefficient.
- o **Private schools** can increase the amounts available to support public schooling if they reduce demand for places in public schools and the savings are translated into enhanced funding for mass school systems providing services to the less wealthy. However, schools financed from fees and charges will not be affordable to households at or near the poverty line and are unlikely to reach those in the third to fifth quintiles of household income without subsidy or very low

teacher's salaries.

- o **Subsidised boarding** which is *elective* remains common in some SSA countries with high costs not necessarily justified by low population density and rurality. Cost should be borne by beneficiaries if boarding is elective.
- o **Participation in higher education** in SSA has doubled in the last decade and will probably do so again in the next decade. Public costs are high and have to be addressed if students from poor households are to participate. New pedagogies offer the promise of more efficient learning and teaching but remain exceptional rather than pervasive.
- o **Higher education is regressively financed** from general taxation. As many as 80 % of the students originate from less than 20 % of the secondary schools and most are from households in the top two quintiles of income. If no fees are charged richer households benefit disproportionately. If fees are charged they are likely to exclude those from poor households who survive to the end of secondary school.
- o **Access to science, technology, engineering and mathematics (STEM)** is limited and can be expensive; few STEM curricula and pedagogies are designed with a view to the costs or impact on the environment but they should be. A new wave of curriculum development is needed that takes full advantage of lower cost technologies of pedagogy and delivery that work effectively.
- o Much **full time pre-career teacher education is inefficient**. Many who are trained do not stay long in the profession especially at secondary level in shortage subjects. The "half life" of a trained teacher – the time it takes for half those who have been trained to leave the profession – can be as little as three years in STEM subjects.
- o The **deregulation of teacher training** has led to a surplus of teacher training output relative to available job in some countries with the burden of costs falling on individuals. Better methods are needed for managing supply and demand.
- o **High stakes assessment** leads to repetition and retakes, generates large additional costs e.g. for tuition, distorts learning and teaching, and has uncertain predictive validity. Managing learning with more use of formative assessment could increase achievement and reduce costs.
- o The **sustainable development goals** and commitments to slow *climate change* and diminish the rate of *non-renewable resource depletion* have yet to be translated into educational planning and development that minimises environmental impact in SSA. Poor school mapping and wide variations in quality are responsible for large amounts of transport related pollution and bronchial morbidity. Inappropriate building design results high operating costs, unnecessary carbon emissions and compromised pedagogy.

Most analysis of efficiency and effectiveness has to be contextually located within particular education systems. System level reviews and analysis of large scale data can identify sources of inefficiency and ineffectiveness. This can be used to catalyse technical assistance linked to situated diagnosis of critical issues embedded in different organisational cultures with different resource constraints. This kind of analysis has to be nationally owned and driven by endogenously determined priorities.

8. Fiscal reforms and increased domestic revenues

The second strategy to diminish shortfalls in educational financing is to promote fiscal reforms. This is often not seen as a topic for educational planning and aid policy but is in fact a core issue. If learning levels are unacceptable and opportunity to learn is inequitably available, financial and other related resource constraints are likely to be central to the problem. Sustainable education systems depend on the development of fiscal states that can finance their own development.

Encouraging fiscal reforms could increase educational investment massively and accelerate progress towards autonomous development⁸.

A medium term goal of aid and other concessionary financing for education should be to replace aid with domestic revenue. This would contribute to the kind of good governance that links tax payers in a social contract with those who govern them. This should enhance accountability and promote public goods that cannot be supported by fragmented markets. The purpose would not be to provide finance to fill gaps in recurrent expenditure. It would be to demonstrate ways in which well founded fiscal policy and management of growing domestic revenues could lead to sustained educational development financed from African sources.

African governments raise revenue to pay for public services through several different mechanisms. These include personal income tax, property taxes, company taxation, VAT/GST, customs and excise duties, and licenses and fees related to extractive industries. Citizens also make payments to local governments and civil society organisations contributions and payments in kind. Public services are largely funded from general⁹ taxation. Some of the opportunities to increase revenues are evident from the status of revenue collection described below.

The best estimates suggest that countries in SSA collect less than 10 % of all tax revenue in income tax through charges on personal income. This compares to over 50 % in OECD countries (Moore et al., 2018). More particularly income tax is only paid by about 5% of all people who live in Africa, compared with 50 % of adults in the OECD. The evidence is that most of the personal tax in SSA is paid by mid-level employees of government and large companies. A study in one East African country indicates only 5% of company Directors and few of the wealthiest officials pay any income or capital gains tax at all (ibid). If the tax that was nominally due was collected this would sharply increase revenue.

Some estimates indicate that over \$500 billion may be held in untaxed assets outside Africa and that at least \$50 billion is lost each year to corporate transfer pricing, money laundering and straightforward tax evasion. It has become clear from data leaks that about 5000 Africans hold assets of over \$6 billion in just one Swiss Bank. This suggests that large amounts of income and assets are diverted off shore and are likely to remain untaxed. Thus fiscal reforms and better compliance could greatly increase revenue collection within existing legislation and generate more resources than aid provides. Money laundering tracking, tax identification numbers, cross border transfer reporting, and unexplained wealth orders will have an increasing effect over time. African governments can and will become more effective at converting tax legislation into revenue streams with lower rates of avoidance and higher capture rates.

Property taxes are not a major source of revenue in many countries in SSA but are substantial in high income countries. This is because of histories of inequitable “hut taxes” and favourable tax treatment of corporately owned property assets. Property taxes can be highly politicised in countries where surplus income is often translated into land and property as a safe haven. Yet property taxes are cheap to collect, linked to visible assets, generally socially progressive. They can be linked to access to services and collected by agencies that have local knowledge. Remote sensing further makes it easy to see and monitor physical assets on the ground. Land registries are a high priority for fair revenue generation.

Corporate taxation on large businesses is uneven and much smaller in volume than it could be. Transnational companies make use of many devices including transfer pricing between subsidiaries in different tax

domains, tax determined transfers of intellectual property rights and royalties to low tax domiciles, cross charged management fees, and off shore payment of dividends and capital gains. The loss in revenue is substantial. In one East African country the unit cost of a particular product was inflated 20 fold as the product left the port to ensure that most value that was declared was added outside the country of origin. This was recovered and was worth almost 1% of all the tax revenue generated nationally.

Tax on small business in SSA is complex and unevenly applied. On the one hand there may be very many regulations, licenses, approvals, fees and inspections all of which may have costs. On the other hand informal belief is widespread that many taxes and other charges can be negotiated with those who collect taxes. Where collection is face to face there is a risk of collusion and evasion. Streamlined systems could be much more efficient and more equitable as SMEs produce an increasing amount of economic activity.

Value Added Tax (VAT) and Goods and Service Taxes (GST) has been promoted as customs and exercise revenues have fallen as cross border tariffs have generally been reduced. VAT is a sales tax. GST taxes the supply of goods and services. Both can be seen as regressive since they tend to apply flat rate tax bands independent of the income of the purchaser. This can be mitigated by making essential products consumed by poorer households VAT/GST free. VAT/GST has to be collected around the point of sale and businesses have to keep records and make tax returns. They may under report or simply not report transactions. VAT/GST collection rates can be increased in many ways e.g. by attaching lottery scratch cards to receipts for services to ensure customers demand receipts and vendors provide them. It may be easier to do this than to increase the rates of collection of personal and corporate taxes.

Customs and excise (CE) duties used to be the main source of national income in most of SSA. Duty is collected as products and services cross borders and significant revenue is generated from taxes on alcohol, tobacco and other luxury goods. There is often a public welfare case to increase rates on products that damage health. The trend has been to reduce import and export taxes within free trade areas. VAT and GST are increasingly collected by CE and cross border transactions are being digitised with benefits for collection rates and fraud reduction.

Taxes on extractive industries in SSA are generally judged to be low and may be non-existent, with tax holidays for investors common. It is not clear these benefit countries since they are at least as many losers as winners in competitions to offer incentives for foreign direct investment. Large scale extractive industries are dominated by transnational corporations that can shift profits from country to country between subsidiaries, declare capital gains and dividends in off-shore low tax jurisdictions, and conceal beneficial ownership by the use of shell companies. Capital gains and company dividends in extractive industries are often moved to jurisdictions distant from where the tangible assets are located. Taxes should be paid where assets are located.

More domestic revenue will be generated in most African countries as economies grow and revenue collection becomes more efficient. Our best estimates of growth in GDP amongst LICs and LMICs in SSA anticipate an average of nearly 5% annually based on five year projections of the IMF before the COVID-19 crisis. The range is wide from less than 2% p.a. to over 8%. At 4% growth GDP will increase by 50 % in ten years. At 7% it will double in ten years with considerable benefits for the ability to finance education from domestic revenue. The GPE anticipates that economic growth should move many of the current LICs into the LMIC category and some will become UMICs by 2030 (Lewin, 2017). These expectations will need adjusting downwards as a result of COVID-19 but growth will return and reduce the number of countries eligible for grants and concessional loans e.g. IDA under current rules. *Ceteris paribus* growth should reduce shortfalls in educational financing as more revenue is collected. Recent research confirms that economic growth has been the main driver of increased public expenditure on education. Changing the share of public expenditure for education and

⁸ This discussion of the fiscal room to manoeuvre builds from original analysis conducted for the African Development Bank and reported in Lewin et al., 2019

⁹ This discussion of tax draws on Moore, Prichard and Fjeldstad (2018) to whom I am grateful for their many useful insights.

shifts in the total volume of public expenditure as a proportion of GDP had less impact on real spending (Al-Samarrai 2019:17).

Revenue may be growing at between 10 % and 20 % in countries modernising their revenue systems with a growing number of modern sector employees. The uncertainty is more about how additional revenue will be spent than whether more will be collected. A combination of reforms will have a cumulative impact. These include the digitisation of the banking system, widespread adoption of electronic payment systems, updated regulatory procedures and tax laws, and more transparent compliance procedures. Integrated data systems are developing that link identity, personal income, assets including property income, company beneficial ownership, bank accounts and consumption behaviour. Customs and excise duties are being digitised and large scale corporate activity is becoming easier to track and audit internationally.

Domestic revenue collected across Africa through personal and corporate taxation, sales taxes, excise duties and other contributions to the public purse totals over \$350 billion a year or about 17 % of GDP. Africa now has a GDP of over \$2 Trillion and SSA over \$1.5 Trillion. The African private sector will have over \$1.8 Trillion under the control of domestic institutional investors by 2020. This should be generating at least \$200 billion of income a year in interest and dividends. These amounts can be compared with total public educational spending that averages about 4% of GDP or \$80 billion across Africa and over \$60 billion in SSA. This is much less than the 6% of GDP generally recognized as being necessary to achieve the goals set by the SDGs for educational investment.

Borrowing is also a potential source of additional revenue for government wishing to increase spending on education. However, loans are not an appropriate way of financing recurrent expenditure since loans have direct costs in terms of management fees and interest payments. Capital has to be repaid in the future from revenue minus debt service payments and other costs. Educational investments generally have a long gestation period and may not produce increased cash flow that can service debt in the short term. More particularly borrowing depends on country credit ratings and the current extent of debt servicing in relation to national income. Though borrowing can increase the ability to invest in education in the short term it does not represent “new money”. More accurately it is spending money today that will be repaid in the future with a risk that future government income will be insufficient to pay off its debts. Prudent borrowing can accelerate development. Imprudent sub-prime borrowing leads to dependence, debt and default.

There are risks that if revenue collection fails to grow faster than GDP and the economy, and if development targets are set related to the SDGs that result in large scale borrowing, education policy will be more determined by lenders rather than governments. African debt has been increasing since 2008 and about 20 SSA countries are already formally in debt distress or at high risk according to the IMF (2018). Since 2015 levels of indebtedness in SSA have been growing rapidly. This reinforces the need to educational development strategies that are based on growth in domestic revenue and which can be sustained without contracting excessive debt. Without this more aid to education and more borrowing to cover recurrent costs will lead to a repeat of the debt crises that led to HIPC.

Surprisingly the International Finance Facility for Education (IFFEd) has argued for more gap filling aid financed primarily by repayable loans using grant aid to reduce capital repayment liabilities and leverage loans to larger amounts that would otherwise be possible. The idea of an International Finance Facility dates from at least 2004 when the UK Department for International Development and Goldman-Sachs promoted the concept (HLSP, 2004). Since then the idea of borrowing forward to front load aid spending that is then paid off (with interest) in the future has been repeatedly promoted. Most recently IFFEd has developed the novel proposition that as LICs get richer and become LMICs they need to receive more aid, not less.

“As countries transition from LIC to LMIC status, aid falls faster than tax receipts rise. Just when many countries start to emerge from very

low per capita income, their growth is constrained as domestic taxes and market related public borrowing fail to expand fast enough to compensate for loss of concessional finance” (IFFEd, 2019:13).

Compensation for successfully developing and losing eligibility for concessional finance is a strange idea that Easterly (2013) would enjoy. This is a new version of the “poverty trap” If more aid to education was guaranteed when countries developed economically this would provide a perverse incentive to suppress domestic revenue collection and underinvest in education. If external resources are offered on this basis moral hazard looms. There is also an assumption that more lending will drive more growth and no recognition that this can only be true up to some threshold beyond which further sub-prime lending would be unwise. The theory of change on which the proposition depends is not articulated and appears to lead to a pathway towards dependence (Lensick and White, 1999). Economic transition should lead to less demand for concessional loans and grants and more financing from domestic revenue. If countries do not want to borrow for recurrent education spending because commercial interest rates are too high, it is not clear that they should they be enticed to do so by de-risking investment with grants and guarantees. The quickest solution is not necessarily the best.

There is a small industry built around identifying alternative methods of financing educational investment in low income countries which is based on the assumption more external finance is needed. This approach has yet to demonstrate it is capable of generating the volume of recurrent finance needed. This is not surprising. No high enrolment, high performance national education systems use innovative finance to fund the bulk of their school systems. Nor is much of their core financing from the private sector, especially for the poorest and most marginalised in SSA. Private sectors in most LICs and LMICs are small and unlikely and unwilling to finance and subsidise education systems delivering services to those on less than USD2 per day and below national poverty lines. Most advocates of innovative financing instruments are venture capital managers and lenders. The question is whether advice on borrowing is best provided by lenders (Lewin, 2018b).

There are many risks associated with different types of innovative financing and few independent reviews (Lewin, 2019). Alternative methods of financing education should be tested against nine questions. All should have straightforward answers.

- i Are they suitable for financing recurrent costs or capital investments? If so over what time period is the arrangement?
- ii What are the transaction costs, commission and management fees and interest payments for leveraging additional resources annually and over the lifetime of the arrangement and who pays?
- iii Are rates of return on investments in partnership with governments capped and how are financial benefits to be distributed?
- iv What conditions are associated with the financing arrangement and do these increase dependence and indebtedness?
- v How do private sector partners finance their contributions, where are they domiciled, and are their partnerships sustainable?
- vi Where is the risk located and how is it mitigated? Is there systemic risk?
- vii How will methods of financing education benefit the children from the poorest households more than those from higher income households? Will the most marginalised be reached on scale?
- viii If domestic revenue can be increased by 5% of GDP, how would the resources generated compare to the new and additional money raised through innovative finance initiatives?
- ix Is there a method to exit loan arrangements and if so at what point is this possible and at what cost?

There are a range of possibilities for fiscal reform which are mapped in more detail in Annex 1.

9. Concluding remarks

In Africa tax, not aid, is now the dominant source of public finance in most countries and this will become more and more so in the future. The fastest growing revenue streams for public finance are from income tax on households in the middle of the income distribution and from indirect taxes on consumption (VAT and GST). The wealthy in SSA including both Africans and expatriates appear under taxed and the top quintile of households contribute less to the revenue base than they do in much of the rest of the world. Corporate taxation is failing to ensure that taxes are paid in countries where value is added. Tax avoidance, transfer pricing, money laundering, fraud and illicit trading result in the loss of many times the revenue generated by aid. Consistent growth and more efficient collection of existing taxes is the only pathway to sustainable educational financing. Fixing revenue generation issues should be prioritised to support exogenous development.

Sooner rather than later most African governments will be able to finance their own development if they hold to the ambition to become fiscal states and make appropriate allocative choices to support public goods like mass education. The problem of gaps in educational finance will shift from absolute shortages of domestic revenue to investment in modern revenue collections systems, resolving problems of unbalanced allocation and inefficient mobilisation, and improving conversion of inputs into outcomes. This are the challenges where aid can provide catalytic assistance for transformations that can sustain themselves.

At the Dakar World Education Forum in 2000 a promise was made that no country with a credible plan would fail to achieve the goals of Education for All for lack of external financing. This promise has been repeated in recent reports but now needs new explanations. The pledge can be seen as a truly altruistic gesture to increase grant aid to levels needed to enrol all children. It could also be seen as a device for financial institutions to retain influence and control over educational investment, and as a part of neo-liberal ambitions to manage the geopolitics of globalisation through conditional lending.

Whatever the motives it is time to re-examine whether this kind of promise is fit for purpose two decades after it was made. Some of the advocacy based projections for grant aid to education stretch credible planning beyond what is feasible or sustainable. External assistance for investment in education can be catalytic and should be increased. But not by amounts likely to exceed the levels that domestic revenue and political will can support to 2030 and beyond. If public financing is underpinned directly or indirectly by rising levels of debt that mortgage the future it will not lead to sustainable investment in education.

Any attractive theory of change that links aid to education and development must address sustainability. If the purpose of aid is to accelerate development towards sustainable outcomes in education the history of the last five development decades indicates two things are essential.

First, aid must be focussed on areas where there is a comparative advantage and long term benefits to external financing. It can be used to promote improved pedagogy, enhance curricula, generate effective learning materials, build resilient infrastructure, improve evidence based decision making, share educational technologies and promote many other things that support autonomous development. It can also be used to highlight market failures to deliver services to the poorest and to the poorest countries. It should not be used to fill gaps in financing that are recurrent except in exceptional circumstances for limited periods.

Second, aid should be used to kindle fiscal reforms and promote the economic growth. This is the only way to reduce long term financial dependence. External assistance must be configured so that it is no longer needed at a defined point in the future. Aid should not increase dependence or increase debt. This means that sector plans should provide a clear framework for long term sustainable development. Aid to education is not primarily about meeting short term targets defined by cross-sectional indicators or one-off fixing of problems that are

recurrent in character. It is about embedding systemic changes that can be sustained for the next generation of children, and the next. Future orientated fiscal reform is an essential part of this process and more important than aid in all but the short term. Valuing the future over the present is a core idea for Sustainable Development¹⁰. This applies to both learning and to resourcing. It should inform the next generation of external assistance to education and lead to sustainable recurrent financing and consistent improvements in access, learning and equity. These will endure beyond the zenith of external assistance to education.

This paper was conceived before COVID-19 disrupted economies and school systems and wreaked devastation on those worst affected. The best working assumption is that the basic arithmetic of educational financing will remain determined by the same parameters that currently shape public financing. The main domains for education system development for basic education will remain grounded in existing diagnoses and taxonomies for change (Lewin 2015:144). The optimistic view is that the pandemic will pass and economic growth and health security will return as has happened with all previous pandemics. Education systems will recover their familiar forms albeit with an evolution of pedagogy and curricula some of which may be accelerated by the experience of COVID-19. Effective demand will favour reconstruction rather than radical disruption of systems that do work, but do not work in all the places that they need to work better. More resilient education systems should be the result with more “just in case” and less “just in time”. It will be more important than ever to rebuild systems that are self-sustaining intellectually and financially.

In sum as the world moves into the development decade it is time to refocus external assistance to address the persistent problems that are both systemic and recurrent. Aid has failed to fill financing gaps and in the worst cases has been accompanied by chronic underfunding of education leading to appeals for more grants and loans without addressing the causes of low quality and unsustainable costs. In reality there is no mathematical certainty in the “infinite do loop” of aid to education. The basic arithmetic of educational financing is clear that there are exit routes and some countries have clearly succeeded in taking the right turns to find their way to different futures. The sentiments of the President of Ghana foreshadow a zeitgeist that can shape the current development decade.

“We can no longer continue to make policy for ourselves, in our country, in our region, in our continent on the basis of whatever support that the western world or France, or the European Union can give us. It will not work. It has not worked and it will not work.... We have to get away from this mindset of dependency. This mindset about ‘what can France do for us?’ France will do whatever it wants to do for its own sake, and when those coincide with ours, ‘tant mieux’ [so much better] as the French people say...Our concern should be what do we need to do in this 21 st century to move Africa away from being cap in hand and begging for aid, for charity, for handouts. The African continent when you look at its resources, should be giving monies to other places...We need to have a mindset that says we can do it...and once we have that mindset we’ll see there’s a liberating factor for ourselves”.

President Akufo Addo, Accra, Dec 2nd 2017. Press Conference Response to President Macron

Thus going beyond business as usual for aid to education should focus on two interlinked priorities. These are to provide: i) catalytic inputs to increase internal efficiency and effectiveness and improve learning outcomes that are nationally defined and owned and ii) to promote fiscal reforms that mean fairer tax and revenue raising systems that can finance public goods and eliminate shortfalls not once, but for the foreseeable future. Then the unequal exchanges associated with aid to education can morph into professional collaborations with more equal power relations, greater consensus about learning for

¹⁰ The Brundtland Commission <http://www.un-documents.net/our-common-future.pdf>

development above the level of basic skills, and renewed commitments to finance education as public goods. This is the pathway to nurture domestic political economies for investment and innovation, generate resilience in the face of systemic risks, and preserve our common futures.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.ijedudev.2020.102247>.

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